STATE OF IOWA

BEFORE THE IOWA UTILITIES BOARD

IN RE:	)	DOCKET NO. RPU-2021-0003
INTERSTATE POWER AND LIGHT COMPANY	)	
	)	DIRECT TESTIMONY

DIRECT TESTIMONY OF STEVEN C. GUYER ON BEHALF OF ENVIRONMENTAL LAW & POLICY CENTER IOWA ENVIRONMENTAL COUNCIL

MARCH 14, 2022

I. INTRODUCTION

Q. Please state your name, business name and address, and role in this proceeding.

A. My name is Steven C. Guyer. I am the Energy & Climate Policy Specialist with the Iowa Environmental Council, located at 505 Fifth Ave, Suite 850, in Des Moines, Iowa. I appear here in my capacity as a witness on behalf of the Environmental Law and Policy Center and the Iowa Environmental Council (collectively "Environmental Intervenors").

Q. Please describe your background.

A. I have an Associate of Arts degree in Electronics Engineering from Hawkeye Institute of Technology in Waterloo, Iowa, a Bachelor of Arts degree in Physics

from the University of Northern Iowa in Cedar Falls, Iowa, and a Juris Doctorate from the University of Iowa in Iowa City, Iowa. I have been working in the energy field since 1988. From 1988 through 2007, I worked in legal and environmental positions at Iowa Southern Utilities, IES Industries, Alliant Energy, and MidAmerican Energy. Since 2008, I have designed and built solar energy systems across Iowa as the owner and president of GWA Solar. In addition to my continued work at GWA Solar, I have worked for the Iowa Environmental Council (IEC) since 2019. The Iowa Environmental Council is a 501(c)(3) non-profit, member-based corporation that works to advance public policies that provide a safe, healthy environment and sustainable future for all Iowans. In my capacity at IEC, I work primarily on renewable energy, energy efficiency, and climate policy.

Q. Have you testified with the Iowa Utilities Board before?

A. Yes. Most recently I testified in Docket No. EPB-2020-0150, the emission plan and budget proceeding for Interstate Power and Light, and Docket No. EPB-2020-0156, the emission plan and budget proceeding for MidAmerican Energy.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to support IPL's stakeholder involved integrated resource planning process and the resource decisions that came from that process. IPL conducted a thoughtful, stakeholder-involved integrated resource planning process and that process supports the addition of 400 MW of Solar Generation and 75 MW of Energy Storage Resources by Interstate Power and Light Company (IPL) in this Advance Ratemaking Principles docket.

II. IPL INTEGRATED RESOURCE PLANNING

Q: What was the result of the IPL Integrated Resource Planning (IRP) process?

A: The IPL Clean Energy Blueprint was the outcome of the IPL IRP. As IPL witness Brent R. Kitchen stated, it "supports IPL's acquisition of up to 400 MW of solar capacity and a 75 MW Battery Energy Storage System (BESS) storage to be placed in service in 2023 and 2024, *which will replace retiring coal capacity, enhance reliability, and take advantage of the investment tax credit (ITC), and provide long-term cost benefits to customers.*" (Kitchen Direct at 3 (emphasis added).)

Q: Do you believe the IPL IRP process produced results that are in the best interest of the customer?

A: Yes. Simply put, because the IPL IRP used portfolio modeling to select resources that will result in a generation portfolio with a lower overall average long-term NPVRR, rather than selecting the resource first and then trying to justify the resource selection.

Q: What was the IPL IRP process?

A: In support of the IPL advanced rate making filed on November 2, 2021, IPL witness Brent Kitchen provided the following explanation of IPL's IRP process:

> As part of Phase 1, IPL developed a set of nine feasible operational pathways for IPL's generating fleet. CRA [Charles River Associates] constructed full portfolios under each of these operational pathways using the portfolio optimization feature in the Aurora resource planning model, including a range of new resource options against IPL's peak requirements

and other modeling constraints. Specifically, IPL and CRA defined distinct retirement dates for several IPL-owned and operated thermal generating units, with associated expenditure estimates at the plant, and then *performed a least cost optimization* in the Aurora model to identify potential replacement resources. …

Among other conclusions, *across all operational pathways* and all scenarios, *utility scale solar was the predominant resource* selected for IPL's capacity needs. …

Among other findings, Phase 2 modeling showed that *adding 400 MW of solar in 2023, combined with coal retirements and gas conversions, results in a portfolio with a lowest overall average long-term NPVRR, provides rate stability, maintains reliability and resource diversity,* and achieves key sustainability metrics through reduced carbon and water use.

(Kitchen Direct at 8 (emphasis added).) IPL's approach determined that utility scale solar best optimized the generation portfolio that included the retirement of Lansing 4 and the conversion of Burlington to gas and resulted in a portfolio with the lowest overall average long-term NPVRR.

Q: Has IPL relied on this IRP process previously?

A: Yes. As a part of the IPL EPB filed on April 1, 2020 in Docket No. EPB-2020-0150, IPL witness Brent Kitchen provided the following explanation of IPL's EPB process:

IPL's corporate strategy includes comprehensive generation and environmental planning focused on meeting customers' energy needs in an

economical, efficient, and sustainable manner. IPL's emissions strategy goes hand-in-hand with its resource planning process and our evaluation of the need for environmental controls is *not done in a vacuum*.

In re Interstate Power and Light Company, docket no. EPB-2020-0150, Kitchen Direct at 4-5 (emphasis added). IPL witness Kitchen further stated:

As we plan to meet customers' energy needs, we strive to ensure that the Company has a balanced generation portfolio that is designed to manage costs and risks for its customers, while remaining flexible to react to future energy needs and environmental and operational requirements. This includes balancing the types of generation and fuels used to reliably produce electricity for its customers, continuing to efficiently operate IPL's existing units, aggressively managing fuel costs, and incorporating renewable generation into the fleet. IPL has been successfully implementing this strategy through its emissions planning process for nearly two decades and will continue to do so in the future [emphasis added].

Q: What resulted from the IPL IRP as part of the IPL EPB in Docket No. EPB-2020-0150?

A: The Board-approved 2020 IPL EPB included the retirement of Lansing 4 and the conversion of Burlington to gas. IPL used the IRP to demonstrate that retiring Lansing 4 and converting Burlington to gas was in the best interest of the IPL customers.

Q: Do you believe the IPL IRP resulted in a more balanced generation portfolio?

A: Yes. The addition of 400 MW of solar and 75 MW of storage will complement IPL's 1,300 MW of utility-owned wind and over 500 MW of renewable power purchase agreements. Rather than adding additional wind, which has a lower accreditation factor in MISO and suffers from lower production during the summer, the addition of solar compliments the existing wind assets with the advantages of having a higher accreditation factor in MISO and maximum production during the summer. In addition, a Battery Energy Storage System paired with solar complements renewables as a dispatchable resource without fuel costs or emissions relative to traditional fossil fuel fired resources.

Q: Are there other examples in MISO where an IRP was used to optimize and produce a balanced generation portfolio?

A: Yes. On February 2, 2022, the Minnesota Public Utilities Commission approved the Xcel Energy Integrated Resource Plan.[1] The IRP modeling resulted in a generation portfolio that eliminates the remaining 1,498 MW of coal generation by 2030, and adds up to 4,650 megawatts (MW) of renewable resources (solar, wind, and storage) including 2500 megawatts of solar by 2032.

Q: Besides IPL and Xcel, are you aware of other examples in MISO where an IRP was used to optimize and produce a balanced generation portfolio?

[1] "Minnesota Public Utilities Commission Approves Xcel Energy's Resource Plan – Prioritizing Low Costs to Consumers, and Environmental and Community Protections," Minnesota Public Utility Commission (Feb. 8, 2022) available at https://mn.gov/puc/about-us/news/?id=518158.

A: Yes. As part of NIPSCO's 2018 IRP process, NIPSCO and Charles River Associates ("CRA") developed a methodology to translate specific IRP bids into manageable inputs for the IRP analysis:

– *The IRP was intended to select the best resource mix and future portfolio concept, and not select specific assets or projects*

– The IRP was a highly transparent and public process that requires sharing of major inputs

– The IRP modeling was complex, and resource grouping improved the efficiency of the process.[2]

The 2018 NIPSCO IRP concluded that "*wind and solar resources were shown to be lower-cost options for customers compared to other energy resource options.*"[3] Actions taken as a result of the IRP include the elimination of coal fired generation by 2028, the addition of 1006 MW of wind, 2330 MW of solar, and 165 MW of battery storage.

III. DECISION TO ADD BATTERY ENERGY STORAGE SYSTEM

Q: Do you support the addition of the Battery Energy Storage System (BESS)?

A: Yes. A BESS can provide many benefits to a utility system.[4] As stated by IPL witness Mayuri Farlinger:

IPL's proposal to include a 75 MW utility-scale BESS will *offer*

[2] "NIPSCO 2018 Integrated Resource Plan Preliminary Lessons Learned," NIPSCO Grid Modernization Initiative Workplan (Apr. 15, 2019) at 14, available at https://secure.in.gov/iurc/files/Contemporary-Issues-Presentation-20190329.pdf.

[3] "NIPSCO Advances Its Cost-Saving Electric Generation Transition Plan with Groundbreaking of First Two Solar Projects," NiSource (Nov. 1, 2021), available at https://www.nisource.com/news/article/nipsco-advances-its-cost-saving-electric-generation-transition-plan-with-groundbreaking-of-first-two-solar-projects-20211101.

[4] Thomas Bowen, et al., "Grid-Scale Battery Storage: Frequently Asked Questions (nrel.gov)," National Renewable Energy Laboratory (Sept. 2019), available at https://www.nrel.gov/docs/fy19osti/74426.pdf.

additional capacity and provide reliability benefits to IPL's customers as IPL increases its renewable energy portfolio. Importantly, the utility-scale BESS is consistent with Iowa's goals for the increased deployment of energy storage and will bring the benefits of *this proven and fast emerging technology* to the state's economy and IPL's customers.

(Farlinger Direct at 6 (emphasis added).) IPL witness Farlinger further stated:

The BESS is a *low-cost solution* that will allow IPL the opportunity to add the largest utility-scale BESS planned in Iowa to date for the benefit of IPL's customers. Specifically, the 75 MW BESS will *help improve the utilization of the solar generating facility by storing energy during periods of low demand and then injecting that energy during periods of higher demand to cost-effectively meet the needs of IPL's customers,* providing enhanced reliability benefits with minimal incremental interconnection costs. In addition, adding the BESS, with its flexible capacity, near IPL's largest load center in the Cedar Rapids area *supports the reliability of IPL's generating fleet* as IPL continues its transition toward cleaner, renewable sources of generation.

(Farlinger Direct at 7-8 (emphasis added).)

Q: Is there evidence that demonstrates a BESS is a proven technology?

A: Yes. As of the end of 2021 there is 4,588 MW of battery storage in the United States with Lithium-ion battery pack prices falling 89% from above $1,100/kWh in 2010 to $137/kWh in 2020.[5] In addition, the Midcontinent System Operator

[5] "Renewable Energy Storage Facts," American Clean Power (cleanpower.org), available at https://cleanpower.org/facts/clean-energy-storage/.

(MISO) includes battery storage as a part of the Generator Interconnection Business Practice Manual (BPM) 015, something MISO would not do for an unproven technology, and currently has 17,462 MW of battery storage in the generation queue of which 1,252 MW is located in Iowa.

Q: Why is a BESS and the dispatchability important?

A: As our society moves to decarbonize the economy and our energy systems transition to increasing amounts of renewable generation, there will need to be dispatchable forms of carbon free energy. Currently in Iowa, fossil-based generation is being used as the dispatchable energy during the periods of low to no renewable generation which is not consistent with a decarbonized society and energy system. Energy storage systems including BESS will be necessary. As stated by IPL witness Kitchen:

> *IPL will need a portfolio that can reliably cover tight margin hours across the seasons and year, and not just at summer peak,* particularly in light of the impact of extreme winter weather events like the recent February 2021 polar vortex. *And, MISO's availability metrics will require dispatchable resources that can complement renewable resources during hours of low renewable performance. A dispatchable BESS can help satisfy these requirements.*

(Kitchen Direct at 16 (emphasis added).)

IV. TAX EQUITY FINANCING

Q: Do you support the use of the tax equity financing?

A: Yes. Through the use of tax equity financing, IPL's economic evaluation

indicated that IPL customers will save approximately $187 million on a nominal basis, and approximately $49 million on a NPVRR basis.

Q: Is Tax Equity Financing well understood in the financing of renewable energy projects?

A: Yes. Tax equity financing has been used on both utility scale wind and solar projects. The key to project financing utilizing tax equity is where have the various risks been assigned and handled. [6]

V. CONCLUSION

Q: Do you support the acquisition of up to 400 MW of solar capacity and a 75 MW Battery Energy Storage System (BESS) storage as part of this advanced rate making principles docket?

A: Yes. The Environmental Intervenors support IPL's acquisition of up to 400 MW of solar capacity and a 75 MW Battery Energy Storage System (BESS) storage to be placed in service in 2023 and 2024, which will replace retiring coal capacity, enhance reliability, and take advantage of the investment tax credit (ITC), and provide long-term cost benefits to customers. Importantly, the IPL IRP used portfolio modeling to select resources that will result in a generation portfolio with a lowest overall average long-term NPVRR, rather than selecting the resource first and then trying to justify the resource selection.

Q: Does this conclude your testimony?

A: Yes.

[6] "The Law of Solar: A Guide to Business and Legal Issues," Stoel Rives LLP (5th Ed. 2017), available at https://files.stoel.com/files/books/LawofSolar.PDF.

AFFADAVIT OF
STEVEN C. GUYER

STATE OF IOWA)
ss.
COUNTY OF)
POLK

I, Steven C. Guyer, being first duly sworn on oath, state that I am the same Steven C. Guyer identified in the testimony being filed with this affidavit, that I have caused the testimony to be prepared and am familiar with its contents, and that the testimony is true and correct to the best of my knowledge and belief as of the date of this affidavit.

_/s/ __Steven C. Guyer_____
Steven C. Guyer

Subscribed and sworn before me the 14th day of March, 2022.

_/s/__Laura James Bandstra_____
Laura James Bandstra
Notary Public in and for the State of Iowa